

## REMARKS

The Specification is objected to for introducing new matter into the disclosure. These objections have been addressed.

The Examiner stated that the drawings were never submitted. The USPTO Public Pair and Applicant's records show that Drawing Figure 1 was submitted. Nevertheless, we resubmit Figure 1 of the drawings.

Claims 3, 6 and 9 are rejected as being of improper dependent form for failing to further limit the subject matter of a previous claim. These claims have now been deleted.

Claims 1-15 and 17-19 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Objectionable terms have been deleted.

Claims 1-15 and 17-19 are rejected under 35 U.S.C. § 103(a) as being obvious in view of *Cheng et al US 5679471* in view of *Koichi JP 59-153852*.

*Cheng* teaches a silver nickel nano composite coating (column 1, lines 6 to 12; column 8, lines 12 to 15). The nano composite coating has a nano crystalline structure (column 4, lines 26 to 31). *Cheng* teaches a material with very small grains, i.e. an average grain size of about 5 to 50 nm. In contrast, *Koichi* teaches a material with very large grains, more than 100 times larger than the grain size taught by *Cheng*. In *Koichi*, the grain volume is explicitly mentioned in connection with increased hardness and improved consumption resistance. The Japanese text on the first page of *Koichi* states in the fourth to last line of the right column that  $150 \mu\text{m}^3$  yields about  $5.3 \mu\text{m}$ , i.e. a grain size of 5300 nm. Hence, *Koichi* teaches a grain sized more than a hundred times larger than the grain size taught by *Cheng*. As both *Cheng* and *Koichi* attribute the superior performance of their contacts to the micro structure, their central teachings are not compatible with each other and cannot be combined to achieve the results described by the examiner.

The examiner has argued that *Cheng* would teach the coating to have a thickness between 0.1 to  $8 \mu\text{m}$  and cites to column 4, lines 26 to 35 in support. In fact, *Cheng* states: "Through vapour deposition, silver and nickel can be readily codeposited on a wide variety of substrate materials to thicknesses of up to about 8000 nm and more, with a suitable

thickness being about 100 to about 500 nm for the composite coating of this invention." Although *Cheng* mentioned a thickness of up to 8000 nm, this thickness is mentioned only as a possibility of what can be achieved by vapour deposition. However, with respect to the teaching of this reference, *Cheng* states that the suitable thickness of his invention is about 100 to 500 nm. Therefore, *Cheng* teaches only a thickness of 100 to 500 nm and implicitly states that a thickness of more than 500 nm is unsuitable. Our present claim 1 explicitly states that the thickness of the coating to be 0.5  $\mu\text{m}$  to 5  $\mu\text{m}$ . Moreover, the thickness of 100 to 500 nm taught by *Cheng* is impossible to achieve with grain sizes of more than 5  $\mu\text{m}$  as taught by *Koichi*.

Present claim 11 contains the features that the coating is deposited by a sputtering PVD process. The examiner has argued that *Cheng* would disclose sputtering in column 4, lines 26 to 35. This is not true. *Cheng* discloses a "vapour deposition process, such as by electron beam evaporation." However, sputtering is not vapour deposition. Sputtering is a process whereby atoms are ejected from a solid target due to bombardment by ions or atoms, i.e. heavy particles. Electron beam evaporation is not sputtering but is instead a thermal evaporation method.

Sputtering and vapour deposition are different processes and yield different results. The adhesion of sputtered layers is usually superior to and tends to have a higher density as compared to vapour deposition/electron beam evaporation.

## CONCLUSION

Applicant asserts that all of the Examiner's objections have been obviated, and therefore now respectfully requests withdrawal of the objections and allowance of the application.

## PETITION FOR AN EXTENSION OF THE TERM

Applicant petitions the Commissioner for a two-month extension of the term from 18 November 2010 to 18 November 2011. Accompanying this response is \$490 to cover the cost of the extension. Any overpayment or underpayment should be credited or charged to deposit account no. 04-2219 referencing our docket number 14261.

Respectfully submitted,

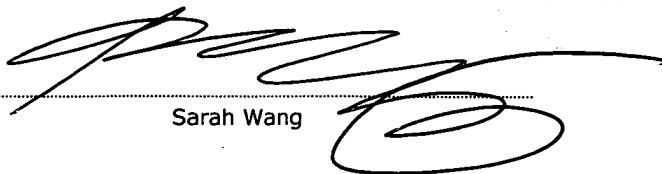


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## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA, 22313, on 18 January 2011.



Sarah Wang